

Translation

PATENT COOPERATION TREATY

PCT/EP2003/013743



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

| | | |
|---|---|---|
| Applicant's or agent's file reference 0000054141 | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/EP2003/013743 | International filing date (day/month/year) 05 December 2003 (05.12.2003) | Priority date (day/month/year) 13 December 2002 (13.12.2002) |
| International Patent Classification (IPC) or national classification and IPC B41C 1/05 | | |
| Applicant BASF DRUCKSYSTEME GMBH | | |

| |
|--|
| 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. |
| 2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet. |
| 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>3</u> sheets, as follows: <div style="margin-left: 20px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). |
| 4. This report contains indications relating to the following items: <div style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application</div> |

| | |
|--|---|
| Date of submission of the demand 05 May 2004 (05.05.2004) | Date of completion of this report 01 March 2005 (01.03.2005) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2003/013743

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1-21 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* _____ 1-11 _____ received by this Authority on _____ 04 September 2004 (04.09.2004)
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages _____ 1/1 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/13743

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-8 | YES |
| | Claims | 9-11 | NO |
| Inventive step (IS) | Claims | 1-8 | YES |
| | Claims | 9-11 | NO |
| Industrial applicability (IA) | Claims | 1-11 | YES |
| | Claims | | NO |

2. Citations and explanations

Reference is made to the following documents:

D1: DE-A-10118987 (BASF Drucksysteme GmbH)

D2: DE-A-10113926 (BASF Drucksysteme GmbH)

Claims 1-8

1. The closest prior art is disclosed in DE-A-10113926 (D2). D2 discloses a method for producing flexographic printing forms by laser engraving in which, as a starting material, a photopolymerisable flexographic printing element is used comprising at least the following items arranged one above the other

- (a) a dimensionally stable support
- (b) a photopolymerisable, relief-forming layer at least 0.3mm thick, at least comprising an elastomeric bonding agent, an ethylenically unsaturated monomer, and a photo initiator, and
- (c) a protective element that is substantially permeable to actinic light, said protective element being a film that is treated or coated in an anti-adhesive manner on the side facing

the relief-forming layer,
wherein the method comprises the following steps in
this sequence:

- (a') removing the protective layer
- (b') cross-linking the relief-forming layer over the
entire volume of the layer by irradiation with
actinic light, and
- (c) engraving a printing relief in the cross-linked
relief-forming layer using a laser that emits
between 3000 and 12000 nm, the depth of the
relief elements that are to be engraved with a
laser being at least 0.03 mm.

The present method differs from the prior art in
that the method comprises the following steps in
this sequence:

- (a) cross-linking the relief-forming layer over the
entire volume of the layer by irradiating
actinic light through the protective element
- (b) removing the protective element, and
- (c) engraving a printing relief in the cross-linked
relief-forming layer using a laser that emits
between 3000 and 12000 nm, the depth of the
relief elements that are to be engraved with
the laser being at least 0.03mm,

and the protective element being a film that is
treated or coated in an anti-adhesive manner on the
side facing the relief-forming layer and that is
applied directly to the relief-forming layer,
wherein the adhesion between the protective element
and the relief-forming layer is set such that the
protective element can be removed from the cross-
linked, relief-forming layer after method step (a).

The method according to claim 1 is therefore novel.

2. The present invention addresses the problem of providing a method for producing flexographic printing forms by laser engraving, in which the appearance of melt edges during laser engraving is prevented (see pages 1-3).

This problem solved in that the photopolymerisable, relief-forming layer is protected against hardening by actinic light by means of a protective element that is substantially permeable to actinic light, said protective element consisting of a film that is treated or coated in an anti-adhesive manner on the side facing the relief-forming layer. The adhesion between the protective element and the relief-forming layer is set such that the protective element can be removed from the cross-linked, relief-forming layer after hardening is complete across the entire surface.

The solution to this problem is not apparent from the prior art and is therefore not obvious to a person skilled in the art.

The subject matter of the present claim 1 therefore involves an inventive step.

Claims 9-11

1. Clarity (PCT Article 6)

The present claim 9 defines a photopolymerisable flexographic printing element having a photopolymerisable (that is, unhardened) relief-

forming layer by means of a desired property of the photopolymerised (that is, hardened) layer, namely:

The adhesion between the protective element and the relief-forming layer is set such that the protective element can be removed from the cross-linked relief-forming layer after illumination (with actinic light on a wavelength between 320 and 700nm through the protective element).

This definition is unclear for two reasons:

1. The features are not features of the photopolymerisable flexographic printing element, but of the cross-linked flexographic printing element obtained after a further method step.
2. The flexographic printing element is defined via a desired property (the protective element should be able to be removed after hardening), without indicating how this property is to be achieved.

2. Novelty (PCT Article 33(2))

- 2.1 Owing to the lack of clarity of the present claim 9 indicated above in point 1 (Guidelines C-III 4.4, C-IV 7.5), any photopolymerisable flexographic printing element which comprises the following items arranged one above the other:

- (a) a dimensionally stable support
- (b) a photopolymerisable, relief-forming layer at least 0.3mm thick, at least comprising an elastomeric bonding agent, an ethylenically unsaturated monomer, and a photo initiator, and
- (c) a protective element that is substantially permeable to actinic light, said protective element being a film that is treated or coated

in an anti-adhesive manner on the side facing the relief-forming layer
is covered by the definition given in claim 9.

- 2.2 D1 and D2 disclose photopolymerisable flexographic printing elements comprising the following items arranged one above the other,
- (a) a dimensionally stable support
 - (b) a photopolymerisable, relief-forming layer at least 0.3 mm thick, at least comprising an elastomeric bonding agent, an ethylenically unsaturated monomer, and a photo initiator, and
 - (c) a protective element that is substantially permeable to actinic light, said protective element being a film that is treated or coated in an anti-adhesive manner on the side facing the relief-forming layer (see D1 and D2, entire documents).

D1 and D2 therefore disclose all the technical features of the present claim 9, insofar as said features are clear.

The subject matter of the present claim 9 is therefore not novel over D1 and D2 and therefore does not meet the requirements of PCT Article 33(2).

- 2.3 Dependent claims 10 and 11 do not appear to contain any additional features which, in combination with the features of any claim to which claims 10 and 11 refer back, meet the PCT requirements for novelty and inventive step.